

## **REMARKS**

### **Claim Objections**

In the Office Action, claims 3, 14 and 15 were objected to because they used the term “positing” instead of “positioning.” Applicants have herein amended claims 3, 14 and 15 as suggested in the Office Action.

Claims 52 and 53 were objected to because there is no antecedent basis in claim 1, from which claims 52 and 53 depend, for the term “computer readable medium.” In response, Applicants have herein amended claim 52 to depend from claim 44 as suggested in the Office Action. Claim 53 also depends (indirectly) on claim 44 by virtue of the fact that it depends from claim 52.

### **Claim Rejections**

In the Office Action, claims 1-5, 16, 19, 30, 35, 44 and 45 were rejected under 35 U.S.C. § 103(a) as being obvious over published U.S. Patent Application 2001/0028399 to Conley. The remainder of the pending claims (i.e., claims 6-15, 17, 18, 20-29, 31-34, 36-43 and 46-53) was rejected as being obvious over Conley in view of U.S. Patent 6,094,198 to Sashua.

In Conley, an array of cameras surrounds a point of interest. Images from the cameras are displayed in sequence to provide a simulation of motion from a perspective along the array of cameras. This is akin to the “fly-around” effect mentioned in the background section (paragraph [0003]) in the present application. Conley, unlike the present invention, does not transform the captured images. As a result, all of the cameras of Conley must be aligned with great precision so that their central viewing rays pass through the point of interest. *See* Conley, ¶ [0016] (“with all cameras aimed and focused upon the same point”). Otherwise, the set of images when played

back will appear bumpy and jittery. Indeed, Conley even points out these drawbacks of his system. *See e.g.*, ¶ [0026] (“There are difficulties to be overcome when employing my methods. Employing camera arrays, one must be certain that the images are in registration with each other so that upon display, images do not jitter about annoyingly, or even incoherently.”); ¶ [0028] (“If the cameras, one after another, pitch, roll and yaw, from camera to camera, by an undesirable amount in orientation to each other, or in orientation to the athlete, then, upon projection we will encounter the same jitter and jump problems mentioned above.”).

Sashua concerns a completely different technology than the present invention (and Conley) -- reconstructing surface elements of solid objects in a 3D scene from a number of 2D images of the scene. The Sashua system attempts to generate three-dimensional reconstruction information for actual objects (rather than to create visual effects as in the present invention) by combining information from numerous captured images taken from different viewpoints. In the present invention, the image transformations are performed without knowledge of the three-dimensional scene structure. This makes Sashua irrelevant to the problem addressed by the present invention, which has nothing to do with object reconstruction.

Applicants submit that claim 1, even without amendment, is nonobvious over the cited references, and Conley in particular, because Conley does not teach or suggest transforming images from the camera systems, much less transforming images to impose a secondary induced motion on the gross trajectory defined by the camera systems, as acknowledged in the Office Action. Nevertheless, in order to expedite allowance of the pending application, and without waiver of Applicants’ right to seek claims that are the same as or similar to original claim 1, Applicants have amended claim 1 to further distinguish the cited references. In particular, claim 1 has been amended to clarify that the step of “transforming images from the camera systems to

superimpose a secondary induced motion on the gross trajectory” is done “*independently of the three-dimensional structure of the scene.*” Support for this amendment may be found throughout the application as filed, including, but not limited to, paragraphs [0021] and [0024].

Conley does not teach or suggest this feature of amended claim 1. Indeed, the portion of Conley cited in the Office Action as disclosing the transforming of the images to provide a rotational effect, namely paragraph [0065] of Conley, discusses how prior knowledge of the spatial dimensions of the subject’s surfaces are needed to form the morph points in Conley. *See* Conley, ¶ [0064]. Thus, Conley does not teach or suggest “transforming images from the camera systems to superimpose a secondary induced motion on the gross trajectory” where the image transformation is done “*independently of the three-dimensional structure of the scene.*” Moreover, the present invention, by applying the transformations “to superimpose a secondary induced motion on the gross trajectory” defined by the camera systems, can eliminate the bumps and jitters in the reply, unlike the Conley system. *See e.g.*, ¶ [0022] of the present application (“misalignment errors between multiple cameras can be corrected so that they appear to fixate precisely on a given POI in the video sequence”).

Sashua also fails to teach or suggest this feature of amended claim 1. As mentioned above, the Sashua system *generates* 3D scene structure based on the images of the object taken from multiple viewpoints. Sashua, therefore, is completely irrelevant to the issue of transforming the images without knowledge of the 3D scene structure.

Therefore, Applicants submit that claim 1 is not obvious in view cited references. In addition, by virtue of their dependence upon claim 1, Applicants submit that claims 2-15 are also not obvious in view of the cited references. *See* MPEP § 2143.03 (if an independent claim is nonobvious, then any claim depending therefrom is necessarily nonobvious).

Also, independent claims 16, 30 and 44 have been amended herein in a manner similar to claim 1. Therefore, for reasons analogous to those set forth above, Applicants submit that claims 16, 30 and 44, as well as their respective dependent claims, are not obvious in view of the cited references.

Applicants are not otherwise conceding the correctness of the rejections with respect to any of the dependent claims in the application and hereby reserve the right to make additional arguments as may be necessary because additional features of the dependent claims further distinguish the claims from the cited references, taken alone or in combination. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

Applicants note that a *Supplemental Information Disclosure Statement* was filed for this application on January 26, 2005.

Respectfully submitted,

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